

Claims:

1. Apparatus for transporting and changing the position of single or double workpieces in a press, press line, multi-stage press for large components (1) or the like, each processing station (8, 9) having an independent transporting apparatus (2) with disengageable crossmember (5), characterized in that the crossmember (5) is mounted spherically in transporting apparatus (2).
- 5 Sub B5
2. Apparatus for transporting and changing the position of single or double workpieces in a press, press line, multi-stage press for large components (1) or the like, each processing station (8, 9) having an independent transporting apparatus (2) with disengageable crossmember (5), characterized in that sucker crossmember (13) is mounted in a movable manner on crossmember (5).
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3. Apparatus according to Claim 1, characterized in that the spherical mounting of crossmember (5) is a universal joint.
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4. Apparatus according to Claim 2, characterized in that slide (27) is mounted in linear guide (28) on crossmember (5) and can be displaced horizontally, via rod (29) and spindle/nut system (21) by drive (19).
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5. Apparatus according to Claim 2, characterized in that arranged on crossmember (5) are guides (26) in which the circle segment (24), which bears the sucker crossmember (13), is guided.
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6. Apparatus according to any one of more of the preceding claims, characterized in that arranged on slide (27) are guides (26) in which the circle segment (24), which bears the sucker crossmember (13), is guided.
- 30 Sub A1
7. Apparatus according to one or more of the preceding claims, characterized in that the circle segment (24) can be pivoted, via rod (23) and spindle/nut system (20), by drive (18).
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8. Apparatus according to one or more of the preceding claims, characterized in that drive (18) and/or drive (19) are/is connected to transporting apparatus (2) via spline shaft (14).
- 5 9. Apparatus according to one or more of the preceding claims, characterized in that spline shaft (14) can be displaced horizontally in transporting apparatus (2).
10. Apparatus according to Claim 1, characterized
10 in that crossmember (5) can be disengaged from
transporting apparatus (2) at separating location (22). *Suck A*
11. Apparatus according to one or more of the preceding claims, characterized in that, following disengagement of crossmember (5), drive (18) and/or drive (19) are/is connected to transporting apparatus (2) via spline shaft (14), universal joint (15) and bearing block (17).
12. Apparatus according to one or more of the preceding claims, characterized in that sucker
20 crossmember (13), slide (27), linear guide (28), rod (29) can be fitted on both sides of crossmember (5) and can be driven jointly via spindle/nut system (21) and drive (19).
13. Apparatus according to one or more of the
25 preceding claims, characterized in that sucker crossmember (13), circle segment (24), guides (26), rod (23) can be fitted on both sides of crossmember (5) and can be driven jointly via spindle/nut system (20) and drive (18).